

App. No. 09 836 158  
Amdt. dated April 5, 2004  
Reply to Final rejection mailed May 22, 2003

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**LEFEVRE**

**SERIAL NO. 09 836 158**

**FILED: APRIL 17 2001**

**FOR: SOLID COMBUSTIBLE  
ELEMENT FOR DISINTEGRATING A  
COMBUSTION DEPOSIT LAYER  
AND METHOD ...**

**Art Unit: 1714**

**Examiner: TOOMER, C.**

**Docket No: KOB 18**

**Commissioner for Patents  
Alexandria, VA 22313**

**SUBMISSION OF BRIEF ON APPEAL**

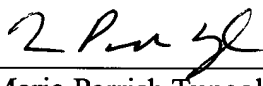
Sir:

Applicants enclose a Brief in triplicate in support of their appeal of the Primary Examiner's Final rejection of claims 2 and 15-28. Also enclosed is a Credit Card Payment Form for the applicable fee.

A Petition for Extension of Time extending the period for filing the Brief to April 5, 2004 (since April 3 was a Saturday) was filed on March 31, 2004.

Respectfully submitted,

LEFEVRE

BY   
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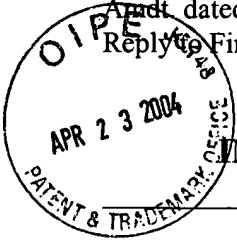
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By 

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ELEMENT FOR DISINTEGRATING A  
COMBUSTION DEPOSIT LAYER  
AND METHOD FOR PRODUCING  
SUCH AN ELEMENT

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APPEAL BRIEF

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By

A handwritten signature in black ink, appearing to be "R. P. 31" or similar, written over a horizontal line.

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#### REAL PARTY IN INTEREST

The real party of interest is the assignee of the entire interest, NV Behoko.

#### RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

#### STATUS OF CLAIMS

Claims 1 and 3 to 14 have been canceled. Claims 2 and 15 to 28 are pending.

Claims 2 and 15 to 21, 27, and 28 stand rejected under 35 U.S.C. §112, second paragraph. Claims 2 and 15 to 28 stand rejected under 35 U.S.C. §103(a) as obvious over Cornwell. Claim 21 stands rejected under 35 U.S.C. §103(a) as obvious over Farjon.

#### STATUS OF AMENDMENTS

An Amendment under 37 CFR 1.116 was filed on March 3, 2004 and was not entered by the Examiner. An Amendment under 37 CFR 1.116 was filed on March 31, 2004 and has not been acted upon by the Examiner. The last amendment requests the cancellation of claim 21 without prejudice to the filing of a continuing application. The amendment also requests the substitution of claim 15 with new claim 29.

#### SUMMARY OF INVENTION

In situations where fire is used as an energy source, smoke is generated and typically removed by means of some form of flue or chimney. Over time, a deposit layer ("combustion deposit layer") is formed on the walls of the flue or chimney and gradually becomes thicker. This combustion deposit layer contains combustible components which can spontaneously burn when exposed to the heat of the fire. So-called chimney fires occur by the ignition of the combustion deposit layer that had formed on the chimney walls. As the combustion deposit layer becomes

thicker, the inside diameter of the opening of the flue or chimney is decreased so smoke removal is less efficient.

The flue or chimney must be cleaned on a regular basis to avoid the potential fire hazard due to combustion deposit layer. Manual cleaning such as chimney sweeping is laborious and time-consuming. Furthermore, the deposit layer is not always sufficiently removed so as to avoid the fire hazard and reduced efficiency. Chemical products have been developed to loosen and/or remove the deposit layer on contact. These types of products have to be applied while the fire is burning so that the active ingredients are carried by the combustion gases to the combustion deposit layer. However, these products are hazardous materials themselves and require special handling before and during use.

The solid combustible element of the present invention provides a simple and efficient means of disintegrating a combustion deposit layer which is convenient, safer to use and less expensive than chemical products used in the prior art. The solid combustible element of the present invention is made by forming an internal space in the element and placing a product that is capable of disintegrating a combustion deposit layer in the internal space. Since the product is inside the internal space, the user is not exposed to the any hazardous material while handling the solid element. The product in the internal space is released when the solid element is consumed by the fire and is carried by the combustion gases to the combustion deposit layer.

The internal space can be formed by drilling an opening in an element made of small particles of a combustible fuel. In a preferred embodiment of the invention, the solid combustible element is formed by compressing an amount of loose particles of combustible materials in the absence of a binding agent to form a solid element that has an internal space. The product for disintegrating of a combustion deposit layer is placed in the internal space. Products for disintegrating a combustion deposit layer are known in the art and include products that contain an ammonium salt such as ammonium sulfate and/or phosphoric acid or phosphorous pentoxide.

## ISSUES

Whether the Examiner erred in rejecting claims 2, 15 to 21, 27, and 28 under 35 U.S.C. §112, second paragraph.

Whether the Examiner erred in rejecting claims 2 and 15 to 28 under 35 U.S.C. §103(a) as unpatentable over Cornwell.

## GROUPING OF CLAIMS

Appellant submits that claims 2 and 15 to 28 do not stand or fall together. Appellants request consideration of the claims in the following groups:

GROUP 1: Claims 22 to 26, and 15 directed to a solid combustible element comprising a product for disintegrating a combustion deposit layer wherein the element is formed by compressing loose particles in the absence of a binding agent to form a coherent aggregate that has an internal space and the product is located in said space. Claim 21 is directed to the product of method claim 16.

GROUP 2: Claims 17 to 20, 28, and 27 directed to a preferred method of manufacturing a solid combustible element that comprises a product for disintegrating a combustion deposit layer wherein the formation of an internal space in the element is performed by compression of particles in the absence of a binding agent.

GROUP 3: Claims 16 and 2 directed to a method for manufacturing a solid combustible element that comprises a product for disintegrating a combustion deposit layer by forming an internal space in the element.

The claims of Group 2 are separately patentable because Cornwall does not disclose or suggest any method in which the formation of the internal space is performed by compression of particles.

The claims of Group 3 are separately patentable because Cornwall does not disclose or suggest the placement of a product for disintegrating a combustion deposit layer in an internal space of a solid element. The aluminum product of Cornwall is *not* a product for disintegrating a combustion deposit layer. Aluminum cannot and will not disintegrate a combustion deposit layer.

## ARGUMENT

**Claim 16 and its dependent claims are in conformity with 35 U.S.C. §112 because one skilled in the art would understand what is claimed when the claims are read in light of the specification.**

Appellant submit that the Examiner erred in rejecting claims 2 and 15 to 21, 27, and 28 under 35 U.S.C. §112, second paragraph. The Examiner erred in rejecting the claims because “claim 16 does not set forth how the solid element is made”. In reviewing a claim for compliance with 35 U.S.C.112, second paragraph, the claims must be considered as a whole to determine whether the claim appraises one of ordinary skill in the art of the scope of the patent, *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). Claim 16 is directed to:

A method for manufacturing a solid combustible element (1) that comprises a product for disintegrating of a combustion deposit layer comprising the steps of forming an internal space (2) in the solid combustible element (1) and placing said product in said space (2) . . . .

The test for definiteness under 35 U.S.C. 112, second paragraph is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.”

*Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). Appellant submits that one skilled in the art would understand what is claimed in claim 16.

The method steps of Claim 16 are a) forming an internal space and b) placing the product for disintegrating a combustion deposit layer in said space. The resulting product is “a solid combustible element (1) that comprises a product for disintegrating of a combustion deposit layer”, for example, a solid element having an ammonium salt or phosphorous pentoxide in an internal space (see page 13, lines 13-15 of the specification). As disclosed on page 6, line 6 of the specification, the internal space can be formed by methods such as drilling a previously made solid combustible element to form the internal space and locating the product in the internal space. After the product is located in the internal space, a “solid combustible element that comprises a product for disintegrating a combustion deposit layer” is manufactured. Therefore,

the claim recites the steps needed to manufacture the solid element having the internal space and the product in the internal space.

Claim 16 and its dependent claims are definite without the recitation of the steps of making the solid element before there is the formation of any internal space. Such solid elements are known in the art and readily available. The generic method of claim 16 includes a method in which such an element is drilled to form an internal space and a product for disintegrating a combustion deposit layer is placed in the space.

**The Examiner erred in rejecting claims 2 and 15 to 28 stand rejected under 35 U.S.C. §103(a) as obvious because the Examiner has not established a prima facie case of obviousness of the claims over Cornwell.**

#### GROUP 1

**The Examiner erred in rejecting claims 22 to 26, 15 and 21 under 35 U.S.C. §103(a) as obvious over Cornwall because 1) there is no evidence that aluminum or high heat disintegrates a combustion deposit layer and 2) there is no motivation in the reference to use a product for disintegrating a combustion deposit layer instead of aluminum**

The invention in Cornwell is directed to a fuel element made from waste materials “which burns with the evolution of great quantities of heat” (col. 1, lines 3-6). The reference discloses that “the interior wall of the bore is sprayed with aluminum particles” (col. 2, lines 28-30). The aluminum reacts with the steam formed by the fire and produces five times as much heat energy per pound as prior art fuel elements (col. 3, line 33-col. 4, line 2). The Examiner acknowledges that Cornwall “does not specifically teach that the aluminum is a product for disintegrating a combustion deposit layer”.

There is no discussion in the reference about combustion deposit layers or the problems created by such layers in a flue or chimney. There is no discussion of any product or method for disintegrating a combustion layer. There is nothing in the reference that teaches or suggests that aluminum or the high heat produced by the aluminum would disintegrate a combustion layer.

Nevertheless, the Examiner has maintained the position that “no unobviousness is seen in this difference” because 1) the aluminum reacts with the steam to produce great heat and 2) “this teaching suggests that no combustion products would form”.

Appellants submit that the *prevention* of the formation of combustion products is different and distinct from the *disintegration* of a combustion deposit layer. The claims are directed to a solid element having a product for *disintegrating* a combustion deposit layer in an internal space. Such a solid element is neither shown nor suggested by Cornwall. The burden is on the Examiner to establish the *prima facie* case of obviousness. Appellant submits that the Examiner has not presented any evidence or technical reasoning to show that aluminum or the heat generated by the aluminum would disintegrate any combustion layer. Whether or not combustion products are formed is irrelevant to the issue of disintegrating a combustion deposit layer that is already present.

There is nothing in Cornwall that would motivate one skilled in the art to use any material other than aluminum. The Examiner has not presented any argument why one skilled in the art would be motivated to use a product for disintegrating a combustion layer instead of aluminum. Therefore, Appellant submits that the Examiner has not established a *prima facie* case of obviousness of the claims over Cornwall.

**The Examiner has not provided any reasons why there would be a reasonable expectation of success from the disclosure of Cornwall.**

Since Cornwall does not discuss the disintegration of a combustion layer or any products capable of disintegrating a combustion layer, Appellant submits that the Examiner has not provided any evidence that there would be a reasonable expectation of success in disintegrating a combustion layer with aluminum in the central bore of the element of Cornwall. Therefore, the Examiner has not met this requirement for a *prima facie* case of obviousness.

## GROUP 2

**The Examiner erred in rejecting claims 17 to 20, 28, and 27 under 35 U.S.C. §103(a) as obvious over Cornwall because Cornwall does not disclose or suggest any method in which the formation of the internal space is performed by compression of particles**

The solid element according to the present invention can be made by compressing particles in a pressing device as described on pages 10 to 12 of the specification. The pressing screw compresses the particles against the walls of a pressing channel. The shank of the pressing



screw occupies space in the front of the pressing channel so that an aggregate with a central passage is formed (see page 12, lines 4 to 13 of the specification).

The Examiner's statement that "Cornwall teaches the limitations of the claims other than" aluminum as a product for disintegrating a combustion deposit layer is not correct. There is no disclosure in Cornwall that teaches any method for forming an internal space in the log by compressing an amount of particles.

Cornwall discloses that the fuel element in the form of a log is formed and then sprayed with aluminum (col. 1, line 62 to col. 2, line 16). The reference teaches that a longitudinal bore can be "drilled on the center line of the log and the interior wall of the bore is sprayed with aluminum particles" (col. 2, lines 28-31). There is nothing in the reference that would motivate one skilled in the art to form the internal space during the formation of the fuel element in a log shape. Therefore, Appellant submits that the Examiner erred since she has not established a *prima facie* case of obviousness of method claims 17 to 20, 28, and 27 over Cornwell.

### GROUP 3

**The Examiner erred in rejecting claims 16 and 2 under 35 U.S.C. §103(a) as obvious over Cornwall because the reference does not teach or suggest the step of placing a product for disintegrating a combustion deposit layer in an internal space in the fuel element of the reference.**

Claims 16 and 2 are directed to a method of manufacturing a solid element that comprises a product for disintegrating a combustion deposit layer. An internal space is formed and the product is placed in the internal space. Claim 16 is generic to a process wherein the internal space is formed by drilling. As discussed in detail in connection with Group 1, Cornwall does not disclose or suggest the use of a product for disintegrating a combustion deposit layer in or on the log of the reference. The aluminum product of Cornwall is *not* a product for disintegrating a combustion deposit layer. Therefore, even if the drilling method of Cornwall is performed, the method does *not* include the step of placing a product for disintegrating a combustion deposit layer in the interior wall of the log. Therefore, Appellant submits that the Examiner erred since she has not established a *prima facie* case of obviousness of method claims 16 and 2 over Cornwell.

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For the reasons discussed herein, Appellant submits that the Examiner erred in rejecting claims 2, 15 to 21, 27, and 28 as indefinite. Appellant also submits that the Examiner erred in rejecting claims 2 and 15-28 as unpatentable under 35 U.S.C. 103(a). Reversal of the Examiner's rejections is respectfully requested.

Respectfully submitted,

LEFEVRE

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\_\_\_\_\_  
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APPENDIX

**GROUP 1: Claims 22 to 26, and 15 directed to a solid combustible element comprising a product for disintegrating a combustion deposit layer wherein the element is formed by compressing loose particles in the absence of a binding agent and Claim 21 directed to the product of the method of claim 16**

Claim 22. A solid combustible element (1) comprising a product for disintegrating a combustion deposit layer, characterized in that the element (1) is formed by compressing an amount of loose particles of one or several combustible materials which have a natural coherence in the absence of a binding agent to form a coherent aggregate that has an internal space (2) and that the aforesaid product is located in said space (2), wherein the product is any of liquid, powder, or solid units.

Claim 23. A solid combustible element (1) according to claim 22 characterized in that the internal space (2) it is closed off after inserting the product.

Claim 24. A solid combustible element according to claim 22 characterized in that the combustible materials are of vegetable origin.

Claim 25. A solid combustible element (1) according to claim 22 characterized in that the aforesaid product is solid units.

Claim 26. A solid combustible element (1) according to claim 22 characterized in that said element (1) has an elongated form that is symmetrical in relation to a central longitudinal axis extending through said element and that the internal space (2) extends along the aforesaid central longitudinal axis.

Claim 15. A solid combustible element according to claim 23 characterized in that the internal space (2) is closed off after inserting the product.

Claim 21 (In independent form). A solid combustible element comprising a product for disintegrating a combustion deposit layer characterized in that said element is manufactured according to a method comprising the steps of forming an internal space (2) in the solid combustible element (1) and placing said product in said space (2), wherein said product is any of liquid, powder, or solid units.

**GROUP 2: Claims 17 to 20, 28, and 27 directed to a preferred method of manufacturing a solid combustible element that comprises a product for disintegrating of a combustion deposit layer wherein the method is performed in the absence of a binding agent**

Claim 17 (In independent form). A method for manufacturing a solid combustible element (1) that comprises a product for disintegrating of a combustion deposit layer, comprising the steps of forming an internal space (2) in the solid combustible element (1) and placing said product in said space (2), wherein said product is any of liquid, powder, or solid units characterized in that the forming step comprises compressing an amount of particles of one or several combustible materials in the absence of a binding agent until the particles form a coherent aggregate.

Claim 18. The method according to claim 17 characterized in that heat is applied during the compressing of the particles.

Claim 19. A method according to claim 17 characterized in that the internal space (2) is formed by maintaining a passage through the element (1) during the compressing.

Claim 20. A method according to claim 17 characterized in that the particles have a natural coherence.

Claim 28. The method according to claim 18 characterized in that the internal space (2) is formed by maintaining a passage through the element (1) during the compressing step.

Claim 27 (In independent form). A method for manufacturing a solid combustible element (1) that comprises a product for disintegrating of a combustion deposit layer, comprising the steps of forming an internal space (2) in the solid combustible element (1) and placing said product in said space (2), wherein said product is any of liquid, powder, or solid units characterized in that the internal space (2) is closed off after the aforesaid product is placed therein, wherein said forming step comprises compressing an amount of loose particles of one or several combustible materials in the absence of a binding agent until the particles form a coherent aggregate.

**GROUP 3: Claims 16 and 2 directed to a method for manufacturing a solid combustible element that comprises a product for disintegrating of a combustion deposit layer.**

Claim 16. A method for manufacturing a solid combustible element (1) that comprises a product for disintegrating of a combustion deposit layer, comprising the steps of forming an internal space (2) in the solid combustible element (1) and placing said product in said space (2), wherein said product is any of liquid, powder, or solid units.

Claim 2 Method for manufacturing a solid combustible element (1) according to claim 16 characterized in that the internal space (2) is closed off after the aforesaid product is placed therein.